

Claims.

1. A toothbrush head having bristles projecting therefrom in a bristle direction, each bristle having an end proximate to the head and an end distanced from the head, *characterised* by the head incorporating a mass of a gel material, and at least a part of a bristle adjacent its end proximate to the head being embedded in the mass of gel material.
2. A toothbrush head according to claim 1 *characterised* in that the gel material is a polyurethane gel material.
3. A toothbrush head according to claim 2 *characterised* in that the gel material has a hardness of less than 10 Shore A.
4. A toothbrush head according to claim 3 *characterised* in that the gel material has a hardness of less than 2 Shore A.
5. A toothbrush head according to claim 2 *characterised* in that the gel material has a hardness of IRHD L 25-65.
6. A toothbrush head according to any one of the preceding claims *characterised* in that the mass of gel material is at least partly covered by an elastic film coating which can deform elastically as the gel mass deforms under the influence of force.
7. A toothbrush head according to claim 6 *characterised* in that the gel material is a polyurethane gel and the film coating is a polyurethane film.
8. A toothbrush head having bristles projecting therefrom in a bristle direction, each bristles having an end proximate to the head and an end distanced from the head, *characterised* by the head incorporating a mass of a polyurethane material, and at least a part of a bristle adjacent its end proximate to the head being embedded in the mass of polyurethane material.

9. A toothbrush head according to any one of the preceding claims *characterised* in that the over the entire part of the bristle(s) or tufts thereof which is embedded in the mass of gel material or polyurethane material, the bristle(s) or tuft thereof is directly in contact with the gel or polyurethane material.
10. A toothbrush head according to any one of the preceding claims *characterised* by a frame of a hard plastics material by which the mass of gel material or polyurethane material is supported.
11. A toothbrush head according to claim 10 *characterised* in that the hard plastics material is a polypropylene, polyamide or acrylonitril butadiene styrene.
12. A process for making a toothbrush head having bristles projecting therefrom in a bristle direction, each bristle having an end proximate to the head and an end distanced from the head, the head incorporating a mass of a gel or polyurethane material, and at least a part of a bristle adjacent its end proximate to the head being embedded in the mass of gel material or polyurethane material.
13. A process according to claim 12 *characterised* by:
- (1) providing a mould having a mould cavity suitable for forming the mass of a gel material in, and having at least one aperture leading from said cavity toward the exterior of the mould and being suitable for the insertion therethrough of at least one toothbrush bristle such that an end of the bristle projects into the cavity,
 - (2) depositing a coating-forming material on the inner surface of the cavity,
 - (3) inserting at least one bristle through said aperture so that an end of the bristle extends into the cavity,
 - (4) introducing a gel material into the cavity such that at least part of the bristle extending into the cavity becomes embedded in the gel material and the coating-forming forms a coating around at least part of the mass of gel material.

14. A process according to claim 13 *characterised* in that the coating-forming material is deposited on the inner surface of the cavity before the insertion of the one or more bristle through the aperture.

15. A process according to claim 13 or 14 *characterised* in that plural bristles are bundled together to form a tuft, and an end of the tuft is melted by heat so that the ends fuse into a blob and are then allowed to cool and solidify.

16. A process according to any one of claims 13 to 15 *characterised* in that the proximate end of the tuft is inserted through the aperture to a distance such that some un-fused bristles are present within the mould cavity so that when the gel is introduced into the cavity the gel can infiltrate between the un-fused bristles.

17. A process according to any one of claims 13 to 16 *characterised* in that the gel material is injected under pressure into the mould in a conventional injection moulding process in a hot fluid state and allowed to cool to achieve its final gel state.

18. A process according to any one of claims 13 to 16 *characterised* in that the gel material is introduced into the mould as a fluid precursor which needs to undergo a chemical reaction to cause it to set into its final gel state.

19. A process according to claim 17 or 18 *characterised* in that the gel material is injected or its precursor is introduced into the mould cavity at such a pressure and in such a fluid state that it infiltrates between the individual bristles in a tuft.

20. A process according to any one of claims 13 to 19 *characterised* in that the gel material with the tufts embedded therein is made as a separate part from the hard plastic part(s) of the toothbrush head and this formed mass of gel with the tufts embedded therein is then fixed into the head.

21. A process according to any one of claims 13 to 19 *characterised* in that at least part of the head of the toothbrush is enclosed within the mould cavity, and the

gel or its precursor is then introduced into the mould to form the gel mass *in situ* in position on the head.